

## **Resolution of OSHA Citations Relating to NEC 110.26(A) -Working Space 600 Volts, Nominal, or less**

### **Discussion**

NEC 110.26 – “Spaces About Electrical Equipment” requires sufficient access and working space be provided and maintained about all electric equipment to permit ready and safe operation and maintenance of such equipment, but this section does not specify dimensions that are considered “sufficient access”. NEC Article 100- Definitions, defines “Accessible (as applied to equipment). Admitting close approach; not guarded by locked doors, elevation, or other effective means.” Also, NEC 110.26(A)- “Working Space” requires that working space for equipment likely to require examination, adjustment, servicing, or maintenance while energized (underline not in Code) shall comply with the dimensions of 110.26(A)(1) [Depth of working space], 110.26(A)(2) [Width of working space], and 110.26(a)(3)[Height of working space]. From the explanatory section of the NEC Handbook “The key to understanding 110.26 is the division of requirements for spaces about electrical equipment in two separate and distinct categories: working space and dedicated equipment space.” Also from the Handbook “ Minimum working clearances are not required if the equipment is such that it is not likely to require examination, adjustment, servicing, or maintenance while energized. However, “sufficient” access and working space are still required.” OSHA inspection at BNL cited instances of safety switches, fusible switches, and electrical panels that are in violation of the requirement for working space.

### **Corrective Action:**

- BNL will correct all instances that do not require extensive reworks.
- The Laboratory Electrical Safety Officer (LESO) and the BHSO Field Representative (BHSO) will evaluate the remaining cited incidents to evaluate if there is sufficient access about disconnects or panelboards to meet the NEC definition of Accessible (as applied to equipment) “Admitting close approach; not guarded by locked doors, elevation, or other effective means”. This is to be the basis for determining safe operation. If there is disagreement, BNL will provide a written basis supporting its position for BHSO review.
- In addition, the LESO will evaluate if the disconnect or panelboard can be deenergized upstream and LOTO by a qualified electrician prior to examining, adjusting, servicing, or maintaining. If both of these conditions are acceptable then the equipment will be controlled procedurally by posting “DANGER – Removal of cover for examination, adjustment, servicing, or maintenance - REQUIRES LOCK/TAGOUT OF SUPPLY - Due to working space limitations”. This will address the “likely to require examination, adjustment, servicing, or maintenance while energized” requirement of the NEC. To support this, BNL will modify LOTO training for Authorized Workers to explain the requirements and purpose of the sign. Also, a toolbox will be developed to bring all Authorized Workers up to speed in the interim.

- If conditions are evaluated as hazardous to the qualified worker, then BSA will perform an engineering evaluation for the proper correction.
- All new or renovated equipment at BNL will be in compliance with the NEC.